

PATTERNED POROUS STRUCTURES

ABSTRACT OF THE DISCLOSURE

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The present invention is a porous structure formed with areas of porous material and areas of reduced porosity or non-porous material. Preferably, the structure is formed in the arrangement of a desired pattern of porous and reduced porosity or non-porous areas. The patterned structure is formed through the collapse of selected portions of the porous structure in the shape of the desired pattern to render these portions of reduced porosity or non-porous while the remaining portions of the structure remain porous. The use of heat and/or pressure is preferred to collapse the selected areas. The collapse may be aided by the use of a softening solvent or solvent/non-solvent mixture. The process can be applied to any polymeric porous structure of any pore size such as ultrafiltration or microfiltration, made by any process such as by track etch, stretching, casting, sintering or extrusion. In addition, it may be used with woven or nonwoven fabrics.

The porous /reduced porosity or non-porous structure may be used alone or in conjunction with other layers, such as additional layers of porous structures, porous support layers, any of which may either containing corresponding porous/reduced porosity or non-porous regions or not , or reduced porosity or non-porous support layers such as films or plastics, which may having openings corresponding to the porous regions of the structure such as multiple well plates or cards.